

Attorney Docket #10010872-1

Remarks/Arguments*A. Examiner's Remarks*

Claim 12 was rejected under 35 U.S.C. §102(e) as being anticipated by USPN 6,485,814 to Morizumi et al.

Claims 13-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morizumi in view of USPN 6,326,689 to Thomas.

Claims 21 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morizumi in view of USPN 6,352,923 to Hsuan et al.

Claims 21 and 22 were objected to because of informalities.

B. Claim rejections - 35 U.S.C. §102(e): Claim 12

Claim 12 was rejected under 35 U.S.C. §102(e) as being anticipated by USPN 6,485,814 to Morizumi et al.

Morizumi teaches a printed circuit board (PCB), having a ceramic substrate 6. The PCB has a hole 10 through which contact can be made. Electronic components (such as integrated circuit (IC) devices, resistors, capacitors, etc.) are mounted to the PCB through the holes (column 1, lines 9-14). The PCB has conductive traces printed on the surface and in internal layers for connecting the electronic components to one another.

In distinct contrast to Morizumi, the present invention teaches a through hole created in a semiconductor chip. Morizumi does not teach a semiconductor device - it teaches a printed circuit board upon which electronic components (that may include semiconductor devices) could be mounted. The present invention is a different structure, on a different scale, and in a different technology than Morizumi's PCB. These differences are evident in claim 12 of the present invention, which recites: "A semiconductor device, comprising: a wafer of resistive semiconductor material, having a through hole..."

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Independent claim 12 is believed to be allowable based on this distinction. No new matter has been introduced. The rejection to claim 12 is believed to be overcome.

C. Claim rejections - 35 U.S.C. §103(a) - Claims 13-17

Claims 13-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morizumi in view of USPN 6,326,689 to Thomas.

Thomas is cited for its teachings on how to optimize the widest width of the through hole in the PCB of Morizumi. However, the teachings of Morizumi and Thomas in combination still refer to a PCB.

In section B above, Applicants submitted that independent claim 12 was believed to be distinct over a PCB. Claims 13-17 depend from claim 12. Therefore, claims 13-17 are also distinct over a PCB.

Claim 13-17 are believed to be allowable, based on the allowability of claim 12. No new matter has been introduced. The rejections to claims 13-17 are believed to be overcome.

D. Claim rejections - 35 U.S.C. §103(a) - Claims 21-22

Claims 21 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morizumi in view of USPN 6,352,923 to Hsuan et al.

Hsuan is cited for its teachings for through holes with non-constant sloped inner walls and curved inner walls. Morizumi in combination with Hsuan would result in a PCB having through holes with non-constant sloped inner walls and curved inner walls. However, the cited references in combination still refer to a PCB.

In section B above, Applicants submitted that independent claim 12 was believed to be distinct over a PCB. Claims 21-22 depend from claim 12. Therefore, claims 21-22 are also distinct over a PCB.

Claim 21-22 are believed to be allowable, based on the allowability of claim 12. No new matter has been introduced. The rejections to claims 21-22 are believed to be overcome.

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E. Claim objections - informalities in claims 21 & 22

Claims 21 and 22 were objected to because of informalities. The terms "the slope" in claim 21 and "the walls" in claim 22 lacked antecedent basis.

Claim 12 has been amended to give the through hole "inner walls" which provide antecedent basis for claims 21 and 22. Claims 21 and 22 have been amended to refer to the "inner walls" of the through hole. The objections to claims 21 and 22 are believed to be overcome.

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Conclusion

If there are any further questions or if more discussion is required, the Examiner is invited to call the Applicants' agent at the telephone number given below. In view of the above, the claims presently in the application are believed to be distinct over the prior art and in condition for allowance. Accordingly, it is respectfully requested that such allowance be granted at an early date.

Respectfully submitted,

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